

4. THE SOLEDAD CANYON CORRIDOR NEEDS TO BE CONSISTENTLY DEFINED AND EVALUATED

Included in the discussion of the SR 58/Soledad Canyon (3.5% maximum grade) alternative carried forward (page 2-73) is a note explaining that 'Soledad Canyon refers to a relatively wide corridor area that included both the SR-14 and UPRR alignments between Antelope Valley and Santa Clarita.' A footnote indicates that, while the SR-14 between Antelope Valley and Santa Clarita was previously recommended for elimination, it was subsequently determined that the Soledad Canyon corridor should be defined to include the SR-14 alignment option. This observation is particularly significant in assessing the ability to further reduce impacts identified for the Antelope Valley alignment in the DEIR/S. Prior screening evaluations indicated that many of the biological, hydrology/water quality, cultural and other natural resource impacts associated with the Soledad Canyon alignment (*as mapped in all of the figures in the DEIR/s to generally align with Soledad Canyon Road from Acton to Soledad*) would be reduced with an alignment following SR-14 through this reach. Conversely, the SR-14 alignment within this reach was identified as having proportionately higher potential land use, property and noise impacts.

Given the wide band of potential specific HST alignments through the Soledad Canyon corridor, all figures in the DEIR/S that depict the Soledad Canyon alignment should be modified to depict the actual width of this study corridor. Further, the impact analyses within each section of Chapter 3 should be modified to specifically discuss the potential to further mitigate impacts with alignment adjustments.

CHAPTER 3: AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION STRATEGIES

SECTION 3.1 - TRAFFIC AND CIRCULATION

The traffic impacts of the No Project, Modal and HST system alternatives are broadly identified in Section 3.1. However, there is no meaningful comparison of the HST system impacts on the I-5 and AV routes between Bakersfield and LA, other than to say that without a Palmdale station, localized traffic impacts in the vicinity of the station would be avoided. The capacity of the Antelope Valley HST alignment to reduce commuter traffic on an increasingly congested SR-14 needs to be specifically evaluated in this section, and in the Bakersfield to Los Angeles Segment Traffic and Circulation technical study.

The Metropolitan Transportation Agency (MTA) recently concluded a three year \$4.7 million dollar North County Combined Highway Corridor Study (NCCHCS), which is incorporated by reference. The study evaluated the growth in the North County including the Santa Clarita region and developed a blueprint for regional transportation. One of the earlier tests was the effect that high speed transit would have on the SR-14 Level of Service (LOS). The screening found that the volume to capacity ratio (V/C) was reduced from 1.8 to 1.3 with the addition of high speed transit to the Antelope Valley but had a very marginal affect on North County traffic via the I-5 corridor. Since the North County did not have control over the development of a statewide or Multi-county high speed transit project, this option was not formally adopted. However, it is very high on the priority list for the North County jurisdictions that participated in the study.

This information should have been included in the document. Similar problems with methods, assumptions and sources are also revealed in the comments that follow.

3.1.1 Regulatory Requirements and Methods of Evaluation

1. COMPLIANCE WITH NEPA AND CEQA REQUIREMENTS IS NOT DEMONSTRATED

This section of the DEIR/S (3.1) does not describe the relevant NEPA requirements for preparation of this document, and does not address whether those NEPA requirements were complied with. Rather, it provides a simple bulleted list of items to be addressed under CEQA. It appears that some of these items were either not addressed or inadequately

addressed in the document. A clarification is needed whether the requirements listed are CEQA-only requirements, Caltrans requirements, or a combination of both CEQA and Caltrans requirements. The source documents of the listed requirements should be cited.

2. QUANTIFICATION OF TRAFFIC CHANGES ON INTERCITY AND LOCAL ROADWAYS VERSUS ROADWAY CAPACITIES IS NOT PROVIDED

The DEIR/S does not provide quantification of changes in traffic volumes on intercity and local roadways as a result of the HST project versus the capacities of those roadways, as measured by volume-to-capacity (V/C) and associated level of service designation (LOS A through F). This is essential in order to make a determination of traffic impacts based on adopted traffic thresholds of significance. At a minimum, the Document must provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

There is no indication in the DEIR/S that affected intercity and local roadways were evaluated according to local county congestion management agencies' level of service (LOS) standards. At a minimum, the Document must provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

3. NO REFERENCE TO CONSIDERATION OF DESIGN FEATURES, HAZARDS, INCOMPATIBLE USES OR ADEQUACY OF EMERGENCY ACCESS

There is no reference in the DEIR/S document that the proposed corridor alignments were evaluated in terms of design features, including consideration of hazards or incompatibility of uses along the proposed alignments. At a minimum, the Document must provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

There is no discussion in DEIR/S document on the adequacy of emergency access. At a minimum, the Document should provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

4. POTENTIAL CONFLICTS WITH ADOPTED PLANS AND PROGRAMS SUPPORTING ALTERNATIVE TRANSPORTATION ARE NOT DISCUSSED

The DEIR/S document does not address potential conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks). At a minimum, the Document should provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

5. POTENTIAL RAIL, WATERBORNE OR AIR TRAFFIC IMPACTS NOT DISCUSSED

The DEIR/S document did not address potential rail, waterborne, or air traffic impacts. At a minimum, the Document should provide references to any analysis conducted or documentation addressing CEQA and/or NEPA requirements.

B. METHODS OF EVALUATION OF IMPACTS

6. JUSTIFICATION FOR USE OF AM PEAK HOUR CONDITION IS NEEDED

The DEIR/S document does not provide an explanation of why AM peak hour condition was used for the screenline analysis in the evaluation of impacts on intercity highway links. Typically, the PM peak hour condition is the preferred analysis time period for either Tier 1 or project specific traffic impact analysis, as the PM peak hour typically represents the worst possible (most highly congested) condition. The DEIR/S should provide backup information to clarify whether the AM peak hour was considered the worst case condition and why it was adopted as the analysis period of choice. Should the PM peak hour conditions be found to be the worst-case condition, the traffic impact findings of the DEIR/S using the AM peak hour conditions could be understated and therefore potentially invalid.

3.1.2 Affected Environment

B. GENERAL DISCUSSION OF TRAFFIC AND CIRCULATION

7. EVALUATIONS OF INTERCITY TRAVEL AND MODAL VERSUS HST ALTERNATIVE ARE LIMITED

The evaluation of the impact on intercity travel is extremely limited, especially given the acknowledgement that study area highway and roadway corridors experience some of the worst traffic conditions in the nation.

Discussion of Modal Alternative versus HST Alternative is limited, and discussion of potential impacts of these alternatives is lacking and appears to have been deferred for subsequent analysis.

C. TRAFFIC AND CIRCULATION RESOURCES BY REGION

BAKERSFIELD TO LOS ANGELES

8. CRITERIA FOR INCLUSION OF AIRPORTS NEEDS TO BE CLEARLY STATED

The DEIR/S does not state what criteria were used for inclusion of airports in the Modal Alternative. For this segment, the Burbank-Glendale- Pasadena Airport (BUR) is the only facility considered. There are other regional airports within the study area, most notably Palmdale International (PMD).

3.1.3 Environmental Consequences

A. EXISTING CONDITIONS COMPARED TO NO PROJECT ALTERNATIVE

9. REFERENCES TO SUPPORTING ANALYSES ARE NEEDED

The DEIR/S does not provide references to supporting analysis comparing existing conditions and the No Project alternative. The discussion in the Document is, by itself, inadequate. Table 3.1-2, in the DEIR/S does not adequately discuss or provide references explaining the calculation of "V/C Average Change from Existing."

BAKERSFIELD TO LOS ANGELES

10. CLARIFICATION OF TRANSIT, GOODS MOVEMENT AND PARKING IMPACTS FOR NO PROJECT ALTERNATIVE IS NEEDED

In the section on Transit, Goods Movement, and Parking, no change is projected for transit and parking conditions under the No Project Alternative. Further, the overall potential impact on goods movement under the No Project Alternative is low. Further clarification is needed to support these statements, including the sources of data and references to technical analysis.

B. NO PROJECT ALTERNATIVE COMPARED TO MODAL AND HIGH-SPEED TRAIN ALTERNATIVE

11. CLARIFICATION OF MODAL AND HST ALTERNATIVE CONCLUSION SOURCES AND REFERENCES IS NEEDED

The discussion on page 3.1-12 suggests that "Modal Alternative" may be over-defined, resulting in excessively high costs. The method or approach that was taken to specify the Modal Alternative should be clarified.

In the last paragraph on page 3.1-13, the document states: "Goods movement and transit have some minor regional or local impacts; however, on a statewide basis, the potential effects of the Modal and HST Alternatives would be negligible. ... there should be little effect on the existing parking supplies." Additional discussion is needed to support these conclusions. The DEIR/S document should identify the sources of data employed and either describe the analytical process used or make reference to supporting documentation.

The DEIR/S document should identify the source of data and references for the planning provisions that were made for parking at airports and station areas under the Modal and HST Alternatives

3.1.4 Comparison of Alternatives by Region

C. BAKERSFIELD TO LOS ANGELES

12. DESCRIPTIONS OF PROPOSED IMPROVEMENTS WITHIN SEGMENTS ARE NEEDED

On pages 3.1-14 *et seq.*, for each project segment, no descriptions of actual improvements are provided. This makes it almost impossible to evaluate the findings presented.

13. STATUS OF STATIONS UNDER MODAL ALTERNATIVE IS UNCLEAR

It is unclear whether the Palmdale and Sylmar Stations were included in the Modal Alternative evaluation. The DEIR/S should describe this analysis in more detail or make references to supporting documentation.

14. METHODS, SOURCES AND ASSUMPTIONS FOR HIGH-SPEED TRAIN ALTERNATIVE EVALUATION ARE LACKING

In reading through the comparison of alternatives by region for the HST Alternative, it is not possible to discern which alignment is being discussed at any given point in the text. Moreover, the DEIR/S does not adequately describe the methodology and source of the trip generation assumption used for the HST Rail Stations under the High Speed Train Alternative. References should be provided.

The DEIR/S document did not adequately describe the methodology and assumptions used in the trip distribution for the HST Rail Stations under the High Speed Train Alternative. Specifically, the DEIR/S should clarify whether the trips assignments were conducted via a transportation model or if the trips were manually assigned. The discussion in the DEIR/S

should include technical data in support of the trip assignment assumptions. References to supporting documents should be provided.

No substantiation is provided for the following conclusions: "The HST Alternative is expected to improve goods movement by grade separating many Metrolink and freight crossings that would be at grade under the No Project Alternative. This outcome would positively affect both train operations that use the grade separation and bus operations that are currently delayed at grade crossings." These conclusions are difficult to understand, given that the HST project would be built almost entirely on new alignment and would have only minimal interaction with existing trackage. (If the Authority were considering grade separating the entire length of existing freight trackage within shared corridors – an immensely costly and complicated effort – this is not described in the DEIR/S, nor are costs for such improvements included in the project cost estimate. In addition, it should be noted that Metrolink provides passenger service, not freight service.

15. THE HIGH-SPEED TRAIN ALIGNMENT OPTIONS COMPARISON LACKS SUFFICIENT DETAIL

The summary of High-Speed Train alignments for the Bakersfield to Los Angeles segment in the DEIR/S lacks sufficient detail needed to support the alignment comparisons.. The selection of an alignment in this project segment is a stated goal of the DEIR/S process, and this critical component of the environmental study should exhibit substantially greater detail and background information to underpin a competent, informed decision. There is substantial evidence to eliminate the I-5 Alternative from further consideration in favor of the Antelope Valley Route

The DEIR/S should, but does not, provide a side-by-side comparison of the traffic impacts/benefits of the I-5 and SR-58/Soledad Canyon Options, in terms such as reducing or adding traffic and resultant levels of service along the intercity study segments.

The DEIR/S states that if SR-58/Soledad Canyon option were chosen, there would be a slight increase in the "aggregate V/C ratio" (from 1.20 to 1.22) in the study area, primarily on the roads that provide direct access to the Palmdale station. "Aggregate "V/C ratio" as used in the Document is simply the simple average of several V/C measurements on several roadway segments. This approach is not a standard method to describe congestion in an area, as it does not reflect the relative volume of traffic being measured on each of the various roadway segments.

The DEIR/S contains no discussion of the potential impact of the HST Alternative on traffic volumes along SR-14, I-5, and other intercity roadways that could be realized with either the I-5 Option or SR-58/Soledad Canyon Option. This information is highly relevant to the alignment selection process, and its omission is a serious limitation that must be corrected.

3.1.5 Mitigation Strategies

16. THE PROGRAMMATIC MITIGATION STRATEGIES LACK SUFFICIENT DETAIL

Given the magnitude, diversity and far-reaching influence of proposed project, the traffic mitigation strategies presented in DEIR/S lack sufficient detail, even given the programmatic nature of the document.

17. THE TRAFFIC CUMULATIVE ANALYSIS DOES NOT ADDRESS UNAPPROVED PLANS CURRENTLY UNDER ENVIRONMENTAL REVIEW

When analyzing the cumulative impacts of a project under 15130 (b)(1)(A) of the CEQA Guidelines, the Lead Agency is required to discuss not only approved projects under construction, and approved related projects not yet under construction, but also unapproved projects currently under environmental review with related impacts or which result in significant cumulative impacts. The DEIR/S analysis should include a discussion of projects under review by the Lead Agency and projects under review by other relevant public agencies, using reasonable efforts to discover, disclose, and discuss the other related projects.

In March of 2004, the County of Los Angeles released the Notice of Preparation for an EIR on the Centennial Specific Plan. The Centennial Specific Plan is proposed on approximately 12,000 acres of land located in the northwestern portion of the Antelope Valley in Los Angeles County, approximately 38 miles northwest of the City of Lancaster and 32 miles north of the Santa Clarita Valley. No consideration is given to this project in the DEIR/S, despite the fact that it would likely have a substantial influence on travel patterns along SR-14, SR-138, and I-5.

TRAFFIC DATA (APPENDIX 3.1 – A)

18. TRAFFIC ANALYSIS METHODOLOGY SHOULD BE CURRENT AND EXPANDED TO PROVIDE MEANINGFUL OPPORTUNITY TO COMMENT

The Level of Service (LOS) and Volume-to-Capacity (V/C) Ratio Definition Table used to assess traffic impacts and compare alignments is sourced as "Transportation Research

Board, 1980.” By contrast, the latest traffic analysis tool from the TRB is the 2000 Highway Capacity Manual. The earlier basis for level of service might not necessarily be inferior, if shown to be still compatible with currently acceptable standards; however, it raises a serious concern that the traffic impact analysis for this truly unprecedented project was conducted based on a 24-year old traffic analysis methodology.

The discussion of the traffic impact analysis methodology, assumptions, and calculations must be expanded in order to provide the public, government agencies, and local jurisdictions the opportunity to comment on the appropriateness of the analysis in relation to existing technical standards.

TRAFFIC DATA (APPENDIX 3.1 – A) – CONFORMITY WITH LOS ANGELES COUNTY CONGESTION MANAGEMENT PROGRAM (CMP)

19. CONFORMITY WITH LA COUNTY CMP GUIDELINES SHOULD BE VERIFIED

The DEIR/S analysis apparently uses LOS and V/C Ratio definitions different than those in the Los Angeles County CMP Guidelines. The DEIR/S should verify whether the traffic analysis complied with local congestion management agency requirements. When a sample DEIR/S V/C value was evaluated with LA County CMP LOS threshold, the resulting level of service designation is not the same (e.g., LOS A versus LOS C).

The DEIR/S should clarify what traffic impact thresholds are used in the study and whether those thresholds equal or exceed federal, regional, and local congestion management agency requirements. This is important, since using less stringent thresholds could potentially affect the findings of the DEIR/S as well as potentially understate either traffic impacts or traffic improvement benefits of the project alternatives. The DEIR/S findings may be vulnerable to challenges when competing corridor segment alternatives are compared from either a traffic impact or traffic benefit (congestion relief) standpoint.

SECTION 3.2 – TRAVEL CONDITIONS

This section of the DEIR/S contains methodological errors and requires substantial clarification in order to be understood by the public and traffic professionals. The information also appears to demonstrate a bias toward the HST system alternative.

1. THE METHODS OF EVALUATION MUST BE CLARIFIED AND REWRITTEN

3.2.1 Methods of Evaluation

This entire section makes repeated reference to the 2000 Business Plan. It would greatly facilitate review and understanding of the analysis if relevant portions of that document were brought into the DEIR/S.

Most of the measures (“travel factors”) discussed in this section are merely determinants of the ridership and traffic impacts described previously. For example, connectivity is just another input to travel time, reliability, etc. This entire section appears to be aimed at justifying purpose and need, and if so, should be relocated to Chapter 1.

Total project cost (capital and O&M) should be part of the set of “travel factors” shown on page 3.2-1, not just passenger cost.

The descriptions of the various “travel factors” provided on pages 3.1-1 and 3.1-2 appear to describe potential problems most associated with auto and air travel (e.g., “congestion,” “roadwork,” “time to check in,” etc.). This gives a strong impression, if not factual evidence, of bias in the environmental analysis and the DEIR/S. The comment that air travel “remains a safe mode compared to the private automobile” is not relevant and is clearly prejudicial.

It is not clear why “connectivity” is defined only in terms of airports and mass transit. Mass transit is not an alternative mode for intercity travel, while auto travel is. Highways are clearly the most interconnected mode of all those under consideration.

The statement “Due to poor connectivity, limited services, and weather impacts, travel options to and from Central Valley cities are limited, travel times are long, and the potential for delay is high.” on page 3.2-2 does not appear to make sense. It is not clear why this is relevant to “geographic connectivity.” Further, travel throughout the Central Valley, as measured by congestion and unexpected delay, is in fact highly reliable.

It is unclear what “sustainable capacity” is measuring other than simply surplus capacity. This measure would appear to be defined in a way that only shows the HST alternative in a positive light. Indeed, one could argue that creating a mode with high surplus capacity represents an inefficient use of resources.

“Cost,” as described on page 3.2-2, is used to estimate travel demand, but is not a comprehensive impact measure that can be used to evaluate the relative impact of the HST and Modal alternatives. An appropriate “cost” measure should include all costs – capital and O&M – incurred by all parties in supplying/making a passenger trip.

In the first paragraph on page 3.2-3, the term “long distance commute trips” is not a standard transportation planning concept, and should be defined for readers.

The relationships shown in Table 3.2-1 are in many ways either redundant or incomplete. For example, most of the goals listed under “Project Need” are already addressed under “Project Purpose.” Also, “Passenger Cost” should apply to many of the goals, but does not, while “Connectivity” is applied to far too many. Given that the relationships depicted in this table set up the context and structure of the environmental analysis, there are potentially numerous logical problems with the analysis that must be addressed.

In Table 3.2-2, “reliability” should be measured simply as the variance in actual travel time relative to expected travel time. All of the “measurements” shown for that factor are in fact “causes” of delay, not measures of it. Further, “sustainable capacity” should be contrasted with a measure of investment efficiency. Having excess capacity is a benefit, but one that comes with an associated cost. Finally, “passenger cost” is an incomplete measure of impact.

2. ANALYTICAL METHODS AND CONCLUSIONS LACK SUFFICIENT SUPPORT

3.2.2 Affected Environment

B. GENERAL DISCUSSION OF TRAVEL CONDITIONS

The highway element of this section appears to cover much of the same ground as Section 3.1, Traffic and Circulation. Again, the text appears to be written more as a justification of the HST project than as a technical description of existing conditions.

On page 3.2-7, it is not correct to state, "... the [highway] accident rate will not change appreciably..." Accident rates have declined dramatically over the past 40 years, and there is no indication by the NTSB or others that they will not continue to do so in the future.

The conclusion that Sustainable Capacity will "deteriorate" under the No Project Alternative appears incorrect. As with connectivity, the appropriate conclusion is that it will not change.

The conclusion that "Airfares are anticipated to increase beyond their current fare structures relative to other modal options" is unsupported and almost certainly incorrect. Airfares are lower today even in *nominal* terms than they were 30 years ago. And thus are dramatically lower on a *real* basis. Trends in the airline industry favor existing and new low-cost carriers, which is further evidenced by the major airlines either lowering their fares or launching new low fare divisions.

The 30-minute "delay penalty" used for the travel time analysis (page 3.2-9) is unsupported in the DEIR/S and associated technical documentation.

The methodology underpinning the travel time analysis summarized in Table 3.2-5 is not described or discussed in the DEIR/S, and no reference is made to any explanation in the supporting technical documentation. For example, the statement that diversion of 200,000 intercity trips onto HST *statewide* would result in an overall 4.1% reduction in auto travel time does not appear reasonable. Though this could be correct, more explanation and documentation is needed.

The 1-, 15- and 30-minute travel time penalties used for the air travel analysis (Table 3.2-6) are unsupported and appear arbitrary. Also, it is unclear why the Modal/HST comparison in that table shows a one-minute *increase* in the travel time for the LA/San Diego pair, while other the other comparisons show a one-minute *decrease*.

The description of HST mode characteristics (pages 3.2-10 & 11) makes numerous assertions without underlying justification or documentation, some of which appear incorrect. For example, European experience for high-speed rail mode share is simply not applicable to California for several reasons, including relative mode costs, degree of government subsidy or pricing by mode, and personal preferences. Also, the assumption that passenger processing at rail stations can be accomplished in dramatically less time because of different security requirements is unfounded.

It is not clear how a hypothetical distinction between air and HST modes on the use of electronic devices applies to the comparison of total travel time between them, which is what this section is addressing. Further, the assumptions used to estimate time available for use of electronic devices are not explained or justified.

The analysis of reliability is qualitative in nature and does not support conclusions regarding the relative reliability of the three modes under analysis.

The reliability analysis for auto travel appears to be written as addressing *all* auto travel, not just intercity travel. Reliability for intercity travel (variance around expected travel time) is much better than for urban travel generally. This has the effect of understating the performance of the highway system for *intercity* travel.

The reliability assumptions used for the HST alternative are, again, based on European and Japanese experience, and are simply not appropriate for use in extrapolating conditions in California. The entire analysis of reliability is, again, written more in the style of advocacy than neutral analysis.

The entire safety analysis is qualitative and written in an advocacy style and format. First, the safety records for auto and air are not compared directly – that is, incidents or fatalities *per trip*, not per mile. Second, no comparable HST data for the United States are available. Third, much of the supporting discussion is either redundant or not applicable to the question being addressed. As with reliability, the entire analysis of safety is written more in the style of advocacy than neutral analysis.

“Connectivity” is not an independent measure of utility, but rather is a contributor to measures of travel time and reliability. As such, the analysis of relative connectivity does not add to understanding of the relative costs and benefits of the three modes.

The purpose of the tables provided in the “Connectivity” analysis is unclear. This entire section appears to be devoted to presentation of travel demand by mode under the three alternatives. That analysis should be developed and presented in much greater detail than currently provided in the DEIR/S.

The comparisons of travel demand by mode (Tables 3.2-12, 13, and 14) do not include any data for the No Project and Modal Alternatives. It is not possible to evaluate the implications

– nor the reasonableness – of the HST Alternative figures (Tables 13 and 14) without these other data.

On page 3.2-30, it is not clear what is meant by “high-end representative intercity demand trips”(Footnote 10).

The analysis of required new highway capacity on page 3.2-31 cannot be understood as written. It appears that the hourly demand figure is based on *total* demand 2020, not incremental demand. Also, it appears that the analysis is based on the simplification that demand is constant between all city-pairs and that all city-pairs are served by a single highway. If these observations are correct, then this entire analysis is completely invalid and should be discarded.

The use of three-minute headways for the HST service is not explained (page 3.2-32). This figure does not conform to any rail operating experience in the United States, intercity or urban, passenger or freight, involving speeds only 15-25% as great as those planned for the HST system. This assumption is simply not credible

It is not clear how the conclusion regarding the HST Alternative on page 3.2-34 (“The HST Alternative would provide a train system with sufficient infrastructure to meet the projected demand and to allow for capacity expansion beyond the design year requirements.”) was reached. No calculations are provided on what residual capacity would exist beyond the 2020 level of demand. Further, there is no assessment of the cost of providing this residual capacity so far into the future.

The analysis of auto costs on page 3.2-35 should use *marginal* costs for the comparison of traveler costs. Fixed costs are incurred whether or not a trip is made on HST (or air). Thus, when \$194 is shown as the auto cost of a trip from San Francisco to Los Angeles, the actual marginal cost is approximately \$73 per vehicle, or \$30 per passenger. (Note that these figures do reflect half of the stated depreciation cost of 18 cents per mile to account for mileage-based depreciation.)

The HST and air mode costs do not include a factor for auto rental, taxi and/or at-station parking, which are major components of business travel cost.

As stated elsewhere in these comments, the 12-minute travel time difference between the I-5 and Antelope Valley Alignments cited on page 3.2-41 is not supported in the DEIR/S or

through reference to a technical document. It is also not consistent with past written and oral statements made by Authority staff and consultants.

SECTION 3.3 - AIR QUALITY

1. THE AIR QUALITY TECHNICAL EVALUATION DID NOT ASSESS HST IMPACTS FOR EACH ROUTE ALIGNMENT OF THE PROPOSED PROJECT.

The Air Quality Technical Evaluation addressed only the three system alternatives: No Project alternative, Modal alternative, and the High Speed Train alternative (hereafter referred to as the proposed project). Thus there is no separate analysis of the alternative HST alignments between Bakersfield and LA. Traffic data was available for these alignments in the "Bakersfield-to-Los Angeles Traffic, Transit, Circulation & Parking Technical Evaluation." This can create differing air quality impacts. For example, it is likely that potential passengers in the Palmdale area will ride the California High Speed Train rather than commute the Antelope Valley alignment is selected. These potential passengers would be bypassed and unable to utilize the proposed project if the lead agency chooses the Grapevine Route. By not evaluating each route option, decision makers within the lead agency are unable to know the air quality impacts associated with each of these routing options and will, therefore, not be able to make an informed decision. Accordingly, air quality analysis should be conducted to display the relative merits between the Grape Vine and Antelope Valley alignment alternatives.

2. IT IS UNCLEAR HOW THE ROUTE OPTIONS AFFECT THE VARIOUS AIR BASINS.

The Air Quality Technical Evaluation provides analysis for each of the affected air basins, but does not identify which of the route options it used in evaluating the impacts of the proposed HST system. This is particularly relevant given that the alternate alignments affect separate air basins. Approximately one-half of the Antelope Valley alignment is located in the Mojave Desert basin, one-quarter in the San Joaquin Valley Air Basin and one-quarter in the South Coast Air Basin. With the I-5/Grapevine alignment, approximately one-half of the alignment is in the San Joaquin Air Basin and one-half in the South Coast Air Basin. Because no separate analysis was conducted on the individual routes, it is impossible to discern their respective impacts on the various air basins. Again, a separate analysis must be conducted of each alignment option.

3. THE AIR QUALITY TECHNICAL EVALUATION ONLY SUMMARIZES THE ANALYSIS AND DOES NOT CONTAIN INFORMATION OR DATA SETS THAT WOULD ALLOW FOR A CRITICAL REVIEW OF THE ANALYSIS PROCESS OR VERIFY THE QUANTITATIVE RESULTS.

Information lacking includes emission factors used for the various mobile and stationary sources (motor vehicles, diesel locomotives, aircraft, and electric generating stations),

number of vehicles assumed for each of the alternatives, average speed of the vehicles, atmospheric conditions (primarily the range of temperature and humidity variations) assumed, and whether or not the on-road pollutant burden calculated for each of the alternatives took into account cold start emissions, warm start emissions, hot start emissions, evaporative emissions, and diurnal emissions. Similarly, the number of plane operations and number of train movements were not quantified for each of the alternatives. These assumptions need to be presented in the Air Quality Technical Evaluation report supporting the findings in the California High-Speed Train Program EIR/EIS in order to provide public agencies and the public the ability to give meaningful comments on the adequacy and accuracy of the air quality evaluation.

4. IT IS UNCLEAR HOW THE ANALYSIS IN THE AIR QUALITY TECHNICAL EVALUATION ASSESSED ON-ROAD POLLUTANT BURDENS FOR EACH OF THE ALTERNATIVES.

On page 3.3-56 of the Air Quality Technical Evaluation the statement is made that "On-road pollutant burdens were calculated as a ratio of baseline VMT [Vehicle Miles Traveled] to estimated VMT changes under each alternative." Calculating ratios of baseline VMT to estimate changes under each alternative is an inappropriate approach in that it is not consistent with the traffic data in the Program EIR/EIS, and does not accurately assess vehicle miles traveled under each alternative. The "Emission Inventory Procedural Manual" published by the California Air Resources Board requires that the EMFAC2002 computer model is used in determining on-road emissions inventories. The analysis needs to utilize the traffic data in the "Traffic, Transit, Circulation & Parking Technical Evaluation" as input to the California Air Resources Board emissions computer model "EMFAC2002" to predict on-road pollutant burdens for each of the alternatives. This suggested methodology will benefit the air quality analysis in that the air quality evaluation will be much more accurate than the ratio approach. The analysis will be consistent with the traffic data used in other portions of the Program EIR/EIS, and will follow long established procedure consistent with the recommendations of the California Air Resources Board for estimating on-road emissions burdens.

On page 3.3-8 of the Program EIR/EIS, the discussion states that "detailed intersection information has not been generated" to facilitate an analysis of localized air quality impacts. This statement is false. In Appendices Q through U of the "Traffic, Transit, Circulation & Parking Technical Evaluations" for each segment of the proposed project there is detailed intersection analysis that shows estimated volumes of traffic during the peak hour, estimated volume to capacity (V/C) ratios, and estimated level of service (LOS) values for each alternative. This information combined with emissions data from the EMFAC2002 computer model, and climate data (average temperature and wind speed) is all that is needed to

conduct an analysis of localized air quality impacts. The California Department of Transportation describes the state and national guidelines for conducting localized air quality impacts in a publication titled "Carbon Monoxide Protocol" (hereafter referred to as the Protocol). The protocol requires that intersections impacted by the proposed project with LOS D or below conduct a detailed localized air quality impact analysis using the CALINE4 computer model. The Air Quality Technical Evaluation failed to conduct this analysis. CEQA Guidelines Section 15064 (d) requires that lead agencies consider both direct and indirect physical impacts when evaluating the potential for significant impacts.

5. THE AIR QUALITY ANALYSIS DID NOT ADDRESS SHORT-TERM CONSTRUCTION IMPACTS THAT WOULD BE ASSOCIATED WITH THE PROPOSED PROJECT.

CEQA Guidelines Section 15126 states that "All phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development [i.e. construction], and operation." On page 7-2 of the Program EIR/EIS, the discussion states that "The potential impacts of this construction activity would be addressed in more detail during project-level analysis." While additional analysis may be required on a project by project-level analysis in the future, information is currently available to assess construction activities as a result of the proposed project on a programmatic level. For example, rail alignments, rail configurations, tunneling alignments, and terminal station configurations are all described in "Alignment Configuration and Cross Sections" and "Engineering Criteria" reports for the proposed project. This information could be used in evaluating potential construction impacts and proposing programmatic level mitigation measures. In this way, the project is afforded the opportunity to address regional impacts and overall project phasing that would not be possible in individual future project by project-level analyses.

While most of the other sections of the Program EIR/EIS provide at least a brief discussion of construction impacts, these impacts are dismissed entirely as a subject for future study in the Air Quality section. The Air Quality evaluation in the Program DEIR/S needs to address construction impacts on a programmatic level and propose programmatic mitigation measures.

7. THE AIR QUALITY SECTION DOES NOT ESTABLISH CLEAR THRESHOLDS OF SIGNIFICANCE OR MAKE SIGNIFICANCE FINDINGS FOR AIR QUALITY IMPACTS.

CEQA Guidelines Section 15126 requires that an EIR identify potentially significant environmental impacts associated with proposed projects. CEQA Guidelines Section 15064(b) requires that the lead agency make a determination of whether a project may have

a significant effect on the environment based to the extent possible on scientific and factual data. CEQA Guidelines Section 15064.7 encourages lead agencies to “develop and publish thresholds of significance . . .”. On page 7 4 of the Program EIR/S the discussion states that “Given the planning-level impact analysis considered in this Program EIR/S, the Authority has not developed project-specific significance thresholds.” While it may be true that the “Authority” has not developed its own significance thresholds, this does not alleviate the Program EIR/S from using significance thresholds in its evaluation and making a determination of significance related to air quality impacts.

If the “Authority” is unable to develop and publish its own significance thresholds, the “Authority” may use thresholds established by the Air Quality Management Districts for regional air pollutant criteria in each air basin so long as the “Authority” explains how the thresholds are pertinent to project impacts. In either case, revisions to the Program EIR/S are required to determine the significance of air quality impacts.

SECTION 3.4 - NOISE AND VIBRATION

1. THE DEIR/S DOES NOT PROVIDE THRESHOLDS OF SIGNIFICANCE.

This section does not provide clear standards to judge the significance of the level of noise and vibration impacts.

2. THE DEIR/S DOES NOT PRESENT A SEPARATE ANALYSIS FOR THE ALIGNMENT ALTERNATIVES.

This section provides an assessment only of the system alternatives and makes only passing reference to alignment alternatives between Bakersfield and LA by saying that the noise impacts are generally the same because both alternatives traverse relatively undeveloped terrain. The basis for this statement is questioned given that the assessment method is based on miles, that one alignment is much longer than the other and that one alignment passes through two fast growing incorporated cities. Also, the technical report included as an Appendix provides information on the relative differences in noise impacts between alternative alignments, but this analysis is not brought forward into the DEIR/S. Again, a separate analysis of each route alternative is necessary in order for decision makers to make an informed choice.

3. THE DEIR/S USES NON-STANDARD METHODS AND CRITERIA FOR EVALUATION OF NOISE IMPACTS

In place of accepted methods, the document uses a screening method to determine the number of miles along each segment of the route that would create high, medium or low noise impacts. The accepted methods and criteria used for evaluating noise and vibration are based upon procedures in two documents prepared by the U.S. Department of Transportation (USDOT):

1. Federal Railroad Administration, "High-Speed Ground Transportation Noise and Vibration Assessment, Final Draft," December 1998.
2. Federal Transit Administration, "Transit Noise and Vibration Impact Assessment," April 1995.

The two USDOT publications use the same noise impact criteria and application method. This include L_{dn} to quantify the noise environment of residential communities, including hospitals and hotels,¹ and the noisiest hour Leq(h) to

¹ **Day-Night Average Sound Level (L_{dn})** - Ten times the logarithm to the base 10 of the ratio of the *day-night average sound pressure* to the reference sound pressure of 20 micropascals. The *day-night average sound pressure* exposure is

evaluate other land use categories.²The use of LDN and Leq to evaluate environmental noise impacts is the accepted standard for rail projects.

These criteria utilize existing estimates of community noise to compare the noise from project sources to calculate the relative difference between the project noise and the existing ambient noise level. The criteria use three ratings: No Impact; Impact; and Severe impact. For higher existing noise environments the allowable increase in the cumulative noise is decreased. For noise environments where the existing Ldn is less than 55 dBA, the project noise may be higher than existing noise environments and where the noise environment is greater than 55 dBA the project noise must be less than existing noise.

The DEIR/S, however, did not use these criteria in the analysis. Instead, screening distances that are presented in the FRA and FTA documents were utilized to define regions of potential impact. These screening distances were categorized by train speed (indicates how much noise is produced), type of corridor (an indication of existing noise environment) and land use (an indication of existing noise environment).

In order to assess the validity of using these screening distances the report performed "typology" evaluations for eleven locations between Bakersfield and Sylmar station within the screening distances between 50 and 900 ft. The report estimated ambient noise levels to be between 50 and 62 dBA. The analysis found "significant impact" at all locations. This may underestimate the number of people potentially impacted since "Significant Impact" is 5 dB above the threshold of "Impact," and therefore screening distance may not be adequate to include all populations that are "Impacted."

Comments on Bakersfield to Los Angeles Region Noise and Vibration Technical Evaluation (2004)

4. THE APPLICATION OF IMPACT CRITERIA IS UNCLEAR.

It is not clear how the HST impact criteria, which uses a sliding scale depending upon ambient noise, can be compared to airport impacts that use a single number of Ldn 65 dBA to define populations impacted. The method of quantifying potential noise impacts from

defined for a 24 hour calendar day and calculated by adding the sound exposure during the daytime (0700 to 2200 hours) to 10 times the sound exposure obtained during the nighttime (2200 to 0700 hours).

² **Equivalent Sound Level (L_{eq})** - The equivalent sound level, L_{eq}, is the level of a constant sound which, in the given situation and time period, has the same sound energy as does a time-varying sound. Technically, equivalent sound level is the level of the time-weighted, mean, square, A-weighted sound pressure. The time interval over which the measurement is taken should always be specified.

highways was not explained sufficiently to be able to evaluate the adequacy of the numbers that were presented in the technical report.

5. VIBRATION SCREENING CRITERIA WERE NOT APPLIED DIRECTLY

The two USDOT publications use the same vibration impact criteria and application method. These criteria use ground-borne vibration levels (VdB) and ground-borne noise levels (dBA) to evaluate vibration impact on land use categories.

The use of VdB and dBA to evaluate vibration impacts is the accepted standard for rail projects. These criteria use absolute values of vibration and ground-borne noise to assess impacts for three land use categories. The values listed in the HST documents correspond to those in the USDOT documents.

However, these criteria are never applied directly. Screening distance developed by FRA and FTA for two speed ranges, < 100 mph and 100 to 200 mph, (labeled as < 125 mph and □ 125 mph in the HST documents) were used to define regions of potential impact. The amount of ground-borne vibration goes up 6 VdB with doubling of speed (FRA, p 8-7) and goes down approximately 7 VdB for each doubling of distance (FRA, p 8-4). Consequently screening distances may under or over estimate the area of effect depending upon speed of the train depending upon how different the operating speeds are from the average in these ranges.

6. SCREENING DISTANCES MAY BE TOO LARGE NEAR STATIONS.

Train speeds near stations would be slower and noise would be correspondingly lower. The analysis used consistent screening distances along the entire route, and this may overestimate impacts near stations.

7. BASE DATA WAS NOT AVAILABLE FOR REVIEW.

The population density contained in the GIS database was not available for review. The accuracy and applicability to the range of land uses along the alternative corridors is unknown.

8. THE SCREENING SYSTEM FOR ANALYZING VIBRATION IS UNCLEAR.

In order to compare alternatives, the HST report introduced "Impact Metric" (IM) in terms of number of people per mile impacted. IM used the screening distances, land use

designation, and the corresponding population density to estimate the number of residences. The analysis used a GIS database containing two Anderson Land Use categories, 11 (residential) and 16 (mixed use). The number of schools and hospitals within the screening distances were also identified. Parkland and hotels were excluded in the IM scheme.

The IM weighted these numbers as shown below:

Description	Weighting	Result of Weighting
Residential	1	Number of people
Mixed Use	0.3	30% of population residential
Hospitals	100	100 persons per hospital
Schools	250	250 persons per school

The IM uses *people per mile* inside the screening distance. It is difficult to understand how using number impacted per mile to compare with other modal systems such as airports, where at best one would use impacts per square mile, is appropriate. In addition, use of a "density" in either case can hide information on the total population impacted. The total number of people potentially impacted by each alternative should be the base for evaluating alternative corridors and the alternatives to the project.

Once the number of people impacted per mile (IM) was determined for each segment, an Impact Rating Scheme (IR) for both noise and vibration was used to assign a High, Medium or Low impact for that segment. The IR assignment method is summarized in the table below:

IR	Noise	Vibration
High	IM > 200	IM > 100
Medium	80 < IM < 200	40 < IM < 100
Low	IM < 80	IM < 40

The necessity of this scheme is not clear nor is its application. There is no justification that to get the same rating twice as many people must be impacted by noise as by vibration.

9. THE IM AND IR SCHEMES DISGUISE THE MAGNITUDE OF THE IMPACTS.

The comparison should be "Number of People Impacted" by either noise or vibration, not number per mile. In addition, total impacted population of the other modes of transportation can be quickly compared. The analysis does quantify the potential number of people impacted by noise and vibration.

The impact rating scheme was applied to sections of each corridor rather than to a corridor. The only justification for a "High," "Medium" or "Low" qualitative assessment would be for comparing alternative alignments, not sections in an alignment.

10. IMPACT NUMBERS IN THE DOCUMENT AND IN THE APPENDIX DO NOT AGREE.

The population potentially impacted is addressed in Table 4.5.1, Table 5.5.1 and the tables in Appendix A of the noise report, pages A-1 to A-7. Unfortunately, the populations presented in these tables for the alternative routes between Bakersfield and Sylmar do not agree:

Alternative	Noise			Vibration		
	Table 4.5.1	A-1	A-6	Table 5.5.1	A-3	A-8
Union Ave + Tehachapi	1153	853	1153	654	354	654
Wheeler Ridge + Tehachapi	1418	1268	1418	199	199	199
SR-58 + Soledad Canyon	477	613	477	240	238	240

Some of the disagreement is whether or not three buildings were either schools or hospitals. Section 3.4 of the DEIR/S identifies them as schools.

There also seems to be an error in counting residential populations along at least two of the alignments. For noise, the range of screening distances for residential land uses is 375 to 900 ft, whereas for vibration it is 200 to 220 ft. Therefore, the number of residents potentially impacted by noise should always be greater than or equal to the number impacted by vibration. However, comparing the tables on page A-1 and A-3 of the technical report, two segments (I-5: Tehachapi Corridor and SR-58 Corridor) have more residents identified as potentially impacted for vibration than for noise:

Alignment	People Impacted by Noise, (A-1)	People Impacted by Vibration, (A-3)
I-5/Tehachapi Corridor	70	109
SR-58 Corridor	40	118

SECTION 3.5 - ENERGY

1. THE ANALYSIS DOES NOT DISTINGUISH BETWEEN THE ENERGY IMPACTS OF ALTERNATIVE HST ALIGNMENTS

The discussion on energy demands and uses is general and covers the entire project rather than individual route segments. The energy evaluation does not indicate which route alignment options it used in the analysis of the proposed 'baseline' HST project. The Program EIR/S needs to address the direct and indirect energy impacts associated with the system alternatives *and* alternative HST alignment in order for decision makers to assess the differences when making a decision on the proposed project.

2. THE ENERGY SECTION DOES NOT INCLUDED CLEAR THRESHOLDS OF SIGNIFICANCE OR MAKE A DETERMINATION AS TO THE SIGNIFICANCE OF ENERGY IMPACTS

CEQA Guidelines Section 15126 requires that an EIR identify potentially significant environmental impacts associated with proposed projects. CEQA Guidelines Section 15064(b) requires that the lead agency make a determination of whether a project may have a significant effect on the environment based to the extent possible on scientific and factual data. Since the Program EIR/S failed to make significance findings or establish significance thresholds for energy impacts, the Program EIR/S needs to be revised to include these findings

3. ENERGY MITIGATION STRATEGIES LACK SPECIFICITY

The DEIR/S presents mitigation strategies for energy conservation. These mitigation strategies are so vague as to be meaningless. As an example, on page 3.5-22 of the DEIR/S one mitigation strategy listed is "Use energy-saving equipment and faculties to reduce electricity demand." While the DEIR/S is a broad program-level analysis reviewing potential energy use statewide, mitigation strategies this broad are useless. The programmatic level analysis should identify regional impacts and find regional mitigation strategies designed to address those impacts. In this way, a program level analysis is able to take advantage of regional level mitigation that project-level analysis would not be capable of doing.

4. THE 'DRAFT STATEWIDE ENERGY TECHNICAL EVALUATION' MERELY SUMMARIZES THE ANALYSIS AND DOES NOT CONTAIN SUFFICIENT INFORMATION OR DATA SETS

The "Draft Statewide Energy Technical Evaluation" only addresses the three system alternatives: the No Project alternative, Modal alternative, and the High Speed Train alternative (hereafter referred to as the proposed project). As indicated in the comments on air quality, the proposed project has several differing alignment alternatives. Although traffic data was available in the "Transit, Circulation & Parking Technical Evaluation" for each of the route alignment options, the "Draft Statewide Energy Technical Evaluation" did not assess impacts for each route alignment of the proposed project.

The "Draft Statewide Energy Technical Evaluation" only summarizes the analysis and does not contain information or data sets that would allow for a critical review of the analysis process or verify the quantitative results. The data sets and assumptions used in the energy analysis needs to be presented in the "Draft Statewide Energy Technical Evaluation" or the Program EIR/EIS in order to provide public agencies and the public the ability to give meaningful comments on the adequacy and accuracy of the energy evaluation.

SECTION 3.6 - ELECTROMAGNETIC FIELDS AND ELECTROMAGNETIC INTERFERENCE

1. THE ANALYSIS DOES NOT DISTINGUISH BETWEEN THE EMF IMPACTS OF ALTERNATIVE HST ALIGNMENTS

A Comparison of Alternatives by Region is completely lacking in this section, and no justification is provided. For consistency with other sections of the DEIR/S and objectives of the Tier 1 analysis, a characterization of sensitive land uses and potential population exposure to electromagnetic fields (EMF) and electromagnetic interference (ELI) should be provided within each region, followed by a relative assessment of exposure associated with each of the HST alignment alternatives. Methods used in Section 3.7 Land Use and Planning, Communities and Neighborhoods, Property and Environmental Justice to evaluate relative land use impacts, or methods used in Section 3.4 Noise and Vibration to evaluate relative noise exposure of alternative HST alignments could be utilized or readily adapted for use in this EMF EMI section.

2. THE JUSTIFICATION FOR EMF MITIGATION IS NOT PROVIDED

Section 3.6.3 concludes by indicating "...the HST Alternative would introduce additional EMF exposures or EMI at levels for which there are no established adverse impacts (page 3.6-5). Given this is the case, it is unclear why implementation of any of the mitigation strategies identified in Section 3.6.4 are warranted or necessary.

3. NO DISCUSSION OF POSSIBLE EFFECTS OF TUNNELS ON EMF EXPOSURE

This section mentions the potential for shielding of ELF electric fields from populations surrounding the HST corridor, but provides no discussion of any differential EMF or EMI effects to passengers or train personnel from exposure within proposed tunnels.

SECTION 3.7 - LAND USE AND PLANNING, COMMUNITIES AND NEIGHBORHOODS, PROPERTY, AND ENVIRONMENTAL JUSTICE

1. SHIFTING FRAMES OF REFERENCE CREATE CONFUSION.

As with other sections of the DEIR/S, the shifting frame of references to the alignments (e.g. SR-58/Soledad Canyon v. 'Antelope Valley'; I-5/Wheeler Ridge v. I-5/Tehachapi) and segments (e.g. Bakersfield to Los Angeles, Bakersfield to Sylmar) and segments within segments (e.g. Bakersfield to Los Angeles 'north', 'central' and 'south'), in the Land Use section makes it very difficult to ascertain whether comparable geographical areas are being addressed and evaluated in the presentation of data and impact ratings. For example, do references to the 'Antelope Valley' alignment consistently refer to the entire SR-58/Soledad Canyon alignment, or merely that portion of the alignment that traverses the Antelope Valley?

2. THE EVALUATION METHODS ARE BROAD AND IMPRECISE.

The method of evaluation of land use compatibility and property impacts rely upon very broad and potentially imprecise assessments of land use types, density categories and proximity to Modal and HST alternatives. The definitions of low, medium and high compatibility and property impact rankings are so highly generalized as to make them almost meaningless without exhibits, mapping and/or some form of quantification (i.e. residential density, as in dwelling units per acre).

3. LAND USE THRESHOLDS IN THE CEQA GUIDELINES ARE NOT USED.

Although similar with respect to reliance upon regional and local general plans as a broad measure of compatibility, the method of evaluation used in this section does not conform specifically to the CEQA Guidelines Appendix G Land Use and Planning criteria, generally relied upon as the measures of land use and planning thresholds of impact significance. These criteria are:

- a) physically divide an established community;
- b) conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including , but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and

- c) conflict with any applicable habitat conservation plan or natural community conservation plan.

4. ANALYSIS OF CONSISTENCY WITH PLANS AND POLICIES IS INADEQUATE

Other than mention of general policies of many jurisdictions (unnamed) to promote transit and transit-oriented development, there is no meaningful discussion of local land use policies in this section. The document discusses compatibility with existing land use plans but does not reference individual plans of counties, cities or regions. There is no specific mention of any specific plans or zoning designations anywhere in this section. The section refers to the list of plans in Chapter 12, but does not discuss the consistency with such plans.

Other than cities and counties, agencies with jurisdiction over the project would certainly include state agencies, and federal agencies, such as the U.S. Forest Service. Certainly the HST alignments, and I-5/Tehachapi alignment in particular, should be discussed with regard to management plans, policies or regulations of the Forest Service, where such alignments directly or indirectly effect national forest lands. Similarly, impacts on lands included within habitat conservation plans should be addressed (or if the analysis is included elsewhere, cross-referenced to other sections of the DEIR/S where an adequate consideration of these issues is included.)

5. THE DEIR/S DOES NOT ADDRESS THE SMART GROWTH IMPLICATIONS OF ALTERNATIVE ALIGNMENTS BETWEEN BAKERSFIELD AND LOS ANGELES.

A comprehensive document entitled *SPRAWL OR SMART GROWTH, Analysis of High Speed Rail Alignments and Smart Growth*, prepared for the California High Speed Rail Authority and the City of Palmdale, California, dated July 26, 2004 by Dr. Robert H. Freilich is submitted apart from these comments and incorporated by reference. Dr. Freilich is the nation's leading authority on this subject and has argued seminal cases before the U.S. Supreme Court.

The essence of Dr. Freilich's argument is that the Antelope Valley alignment places important transportation infrastructure in an area that is poised and prepared for additional urbanization and that bypassing this area would force development into the San Joaquin Valley where prime farmland would be urbanized. A summary of the argument is as follows:

The Antelope Valley Alignment Furthers Smart Growth Policies Embodied In State, Regional And Local Land Use Plans. In California and nationally "sprawl" refers to

unplanned, single use, auto dependent development built without regard to availability of infrastructure whose need is generated by new growth. "Smart Growth" is the antithesis of sprawl. It channels growth either into compact sustainable development patterns within regional growth boundaries already served with infrastructure or within discrete compact planned outlying new towns or communities with appropriate densities, mixed uses, affordable housing, sustainable walkable environments and adequate public facilities. The Antelope Valley alignment will encourage Smart Growth. The Grapevine alignment accomplishes the opposite - eliminating a station in the Antelope Valley, it will disperse development beyond existing infrastructure on large lots destroying critical agricultural land in the Central Valley. Despite its separation from the city of Los Angeles by the Angeles National Forest, the Antelope Valley is the antithesis of leap-frog development. It is connected to Los Angeles by high-capacity road and now rail infrastructure, and is an important mixed- use regional center with complete infrastructure systems. It will accommodate the large increases in population anticipated in all regional forecasts.

The Antelope Valley Alignment Is Consistent With State, Regional And Local Agricultural Preservation Policies. Agricultural preservation is not only a key element of Smart Growth, it is particularly important to southern California and the Central Valley because of the vast economic importance of farming to the state's economy. Protection of the sensitive and valuable agricultural resources of the Central Valley through reduction of the conversion of prime agricultural lands to urban development, and preservation of open space and environmentally sensitive lands is a key part of state, regional and local policy.

The Antelope Valley Alignment Addresses The Population Impacts Of High Speed Rail Infrastructure In A Way That Supports Regional Smart Growth Policies. Without the Antelope Valley alignment, excessive growth occurs in the Central Valley. The Grapevine Alignment passes over the areas of north Los Angeles that are needed and capable of accommodating future growth and development and substitutes excessive growth in the Central Valley. This promoted the efficient and equitable distribution of population on a regional basis between Southern California and the Central Valley.

The Antelope Valley Alignment Places Transportation Facilities And Related Growth In Places Where Infrastructure Is Already In Place. Locating high capacity infrastructure only in remote locations would disperse growth patterns and create sprawl. Reducing urban sprawl is achieved by promoting redevelopment and infill of existing incorporated built up areas. This is discussed in detail in Part V of the Freilich Report (July 26, 2004). In summary the report states that

State and regional policy calls for the prevention of urban sprawl and “leapfrog” development into areas not served by infrastructure. In fact, the high-speed rail statute itself expressly provides that “the high-speed train system shall be planned and constructed in a manner that minimizes urban sprawl and impacts on the natural environment” (California Streets And Highways Code § 2704.09). There is sufficient capacity in the Antelope Valley to handle a significant portion of the rapid growth in Southern California and the Central Valley. Metropolitan Los Angeles is running out of land to accommodate an expected 6 million new residents over the next 20 years. The Antelope Valley has an abundant supply of vacant undeveloped land already served by transportation infrastructure (including arterials, transit, and airports), water, sewer, and other public utilities. By placing high capacity transportation infrastructure in the Antelope Valley, the region can absorb additional growth without extending new infrastructure beyond presently served areas. The Antelope Valley will accommodate this growth without further loss of agricultural lands, environmental resources, significant increases in trip lengths, air quality degradation, and declines in infrastructure capacity.

The Antelope Valley Alignment Positions The Palmdale Transportation Center and Airport As A True Mixed Use Transportation Corridor Center.

The Antelope Valley has developed the range of uses needed to support transportation and land use policies embodied in state laws such as the Transit Village Planning Act. The Palmdale transportation center or airport can generate substantial long-term leasehold revenue and concession income through joint public-private development that will directly mitigate high speed rail alignment costs. The Antelope Valley alignment provides integration with transportation and infrastructure policies for Lancaster and Palmdale by (a) rerouting a percentage of commuter traffic off Rte 14; (b) establishment of a transit hub to increase transit ridership reducing projected traffic volume increases along Interstate 5, particularly on the highly congested segments south of Rte 14; and (c) creating major public capital and service cost savings for infrastructure, operation, maintenance and public service costs, through having adequate public facilities at time of development, eliminating the major concerns related to discontinuous development.

Local Land Use Policies Support High Speed Rail Infrastructure. Palmdale’s general plan and zoning regulations accommodate transit supportive land uses and densities, as well as a wide range of uses within the station influence area. These uses are uniquely supportive of the intercity rail system that the high speed rail network will provide.

The report concludes:

- The Antelope Valley alignment is superior to the Grapevine alignment on all of the local, regional, state and federal land use environmental and smart growth policies. It protects agricultural resources from accelerated spillover growth, maximizes ridership, and supports regional and local land use patterns. To bypass Antelope Valley would create an enormous gap between the high speed rail infrastructure and a large population searching for alternative transportation options. The Authority should approve the Antelope Valley alignment as it moves forward with this project.
- The Palmdale development does not reflect or promote urban sprawl or leapfrog development. On the contrary, it promotes all of the county's existing and draft General Plan objectives by introducing the full complement of Smart Growth techniques.
- The Antelope Valley station should be included in order to comply with state smart growth mandates. First, the Antelope Valley alignment furthers state, regional and local smart growth policies. Second, it protects the state's valuable agricultural land from excessive conversion to urban uses. Third, it allocates the population impacts of high speed rail infrastructure in a way that supports regional smart growth policies. Fourth, it puts transportation facilities and related growth in places where infrastructure is already in place. Fifth, it positions the Palmdale Transportation Center and airport as a mixed-use transportation corridor center. Finally, it takes advantage of local land use policies that already support high speed rail infrastructure and joint development opportunities that will generate revenue and ridership for the system. The Antelope Valley alignment will take an important step to implement the state's essential smart growth policies.

6. CLARIFICATION OF IMPACT STATEMENTS, SEGMENT REFERENCES AND FIGURES ARE NEEDED.

On p.3.7-5 (1st paragraph; 2nd to last sentence): The basis for the conclusion that the proposed HST system as a whole would not result in disproportionate impacts on minority and low-income populations is not explained here.

Figure 3.7-3 Existing Land Use-Bakersfield to Los Angeles. The regional scale and relatively indistinguishable pale colors make this exhibit almost useless as a tool in assessing or verifying land use compatibility impacts. What is the percentage of the alignment that is included in each land use category?

Figure 3.7-12 Potential Property Impacts Bakersfield to Los Angeles-HST Alternative. The regional scale of this exhibit makes it difficult to distinguish specific segments within each category (high, medium, low). In some instances, it appears as if two or three categories may be overlapping, although these cannot be clearly distinguished. What is the percentage of each alignment that is included in each land use category?

Table 3.7-1 Compatibility of Land Use Types. Multifamily residential is included under both 'medium compatibility' and 'high compatibility' categories. What explains this duplication?

On p.3.7-8, Bakersfield to Los Angeles. The 'three distinct sub-regions' referenced in this section—north, central, and south, are not clearly distinguishable based upon the descriptions here and at the top of page 3.7-9. Please indicate the limits of these sub-regions on one of the Figures in the EIR/S. It should be noted that much of the central sub-region as it applies to the Antelope Valley alignment is not included in national forest, as described on these pages.

On p.3.7-11 A. Existing Conditions Compared to No Project Alternative. As the No Project Alternative described herein includes funded and programmed improvements, these improvements are presumably already known, and the impacts stemming from them could be discerned and generally described in this section, albeit at a program EIR level of detail. Therefore, this assessment would not be a speculative undertaking, as suggested here.

On p. 3.7-12 Environmental Justice (3rd sentence). As on page 3.7-5 previously, the basis for the conclusion that either the Modal or HST Alternatives as a whole would not result in disproportionate impacts on minority and low-income populations is not explained here.

On p.3.7-18 High Speed Train Alternative it states "most of the proposed alignment options in this region would be constructed outside of existing transportation right-of-way,...." What alignment options other than the Wheeler Ridge/I-5/Tehachapi, the Union Station/I-5/Tehachapi, and SR-58/Antelope Valley/Soledad Canyon proposed options is this statement referring to?

Verification of the property impacts described under Property-HST Alternative is difficult without clear mapping that illustrates those segments of each alignment that are included in the very broad, and potentially overlapping seven development-type categories included in prior Table 3.7-2 (i.e. Rural/Suburban, Suburban/Rural, Urban, Rural Developed, Suburban Industrial/Commercial, Urban Business Parks/Regional Commercial, Rural Non-developed).

Mapping of this data layer at a suitable scale is needed to be able to independently confirm the mileages, percentages of alignment and impact ratings associated with each alignment in this discussion and on Figure 3.7-12. In viewing this figure, it would appear the percentage of alignment included within the 'high' property impact category for the Union Avenue/I-5 alignment is approximately the same or higher than the corresponding percentage for the SR-58/Soledad Canyon (Antelope Valley) alignment.

On p.3.7-20, under Environmental Justice - HST Alternative and Alignment Options Comparison, the shifting and confusing references to segments or portions of segments in these passages make it very difficult to understand the relative impacts of the basic alignment alternatives on minority populations. The reference to the proposed I-5 (Union Avenue and Wheeler Ridge) options as being potentially more compatible with existing land use than the SR-58 option (SR-58 only or entire SR-58/Soledad Canyon alignment?), would appear to be in conflict with conclusions reached for Union Avenue/I-5 under land use compatibility, communities and neighborhoods, and property impacts.

7. FURTHER ANALYSIS OF CONFLICTS WITH TEJON RANCH PLANS ARE NEEDED.

On p.3.7-19, it is noted here that the I-5 Tehachapi Mountain potential cut and fill crossing near Tejon Lake in Castaic Valley may be in conflict with Tejon Ranch plans to build a low density residential village near Tejon Lake. Additional discussion and analysis of this conflict are needed in this section. Also, In March of 2004, the County of Los Angeles released the Notice of Preparation for an EIR on the Centennial Specific Plan. The Centennial Specific Plan is proposed on approximately 12,000 acres of land located in the northwestern portion of the Antelope Valley in Los Angeles County, approximately 38 miles northwest of the City of Lancaster and 32 miles north of the Santa Clarita Valley. No consideration is given to this project in the DEIR/S, despite the fact that it would likely have a substantial influence on travel patterns along SR-14, SR-138, and I-5. The DEIR/S does not discuss consistency with individual development plans, general plans or regional plans.

8. MITIGATION STRATEGIES ARE INADEQUATE.

Land Use Compatibility (page 3.7-26). This brief statement merely addresses the scope of the subsequent review process in alignment and station location selection, but says nothing about strategies to mitigate land use impacts.

Environmental Justice (page 3.7-27). No justification or explanation is provided for the conclusion that the HST system would not result in disproportionate adverse effects to minority or low-income populations.

SECTION 3.8 - AGRICULTURAL LANDS

1. THIS SECTION IS VERY BROAD AND USES INADEQUATE THRESHOLDS OF SIGNIFICANCE.

This section of the DEIR/S provides only a very broad measure of potential impacts on farmlands and relies on an incomplete measure of thresholds of impact significance for agricultural resources, pursuant to the CEQA Guidelines.

3.8.1 Regulatory Requirements and Methods of Evaluation. This section cites PRC 21060.1 and CEQA Guideline 21095[a] as references for consideration of agricultural land conversions in the environmental review process. PRC 21060.1 defines 'Agricultural Land' as prime farmland, farmland of statewide importance, or unique farmland. CEQA 'Guideline' 21095[a] is actually the citation from the CEQA statute, not the Guidelines. PRC 21095[a] identifies the LESA Model as an optional method to ensure that significant effects on the environment of agricultural land conversion are quantitatively and consistently considered in the environmental review process. However, the method of evaluation of impacts that follows in Section 3.8.1, 3.8.2 and 3.8.3 does not utilize the LESA model to distinguish significant effects.

Where the LESA model is not utilized, reliance should be placed upon CEQA Guidelines Appendix G criteria for impact significance (i.e. 'thresholds of significance'). In addition to conversion of prime farmland, unique farmland or farmland of statewide importance, the CEQA Guidelines Appendix G criteria for Agricultural Resources include 'conflicts with existing zoning for agricultural use or a Williamson Act contract' as an explicit factor to be addressed. Although the Williamson Act is described in Section 3.8.1, there is no further discussion or quantification of conflicts with Williamson Act contracts in DEIR/S Section 3.8. The number of parcels under such contracts that are impacted by the Modal and HST System Alternatives, including the HST alignment options, should be identified, even at this Program EIR level of review. [Note: Section 7.3.1 CEQA Significance Thresholds indicates the CEQA checklist thresholds (Appendix G) have been used to evaluate the significance of effects of the HST Alternative.]

2. THE I-5/GRAPEVINE ALIGNMENT ALTERNATIVE DISPLAYS GREATER IMPACTS ON AGRICULTURAL RESOURCES.

On p. 3.8-16 and Table 3.8-1, the I-5 alignment HST options within the Bakersfield to Sylmar segment are identified as having the greatest potential farmland impacts (63 acres). This is in contrast with the *SR-58/Soledad Canyon* (Antelope Valley) alignment, which is identified

as having no impact on farmlands. As demonstrated in a comprehensive document entitled *SPRAWL OR SMART GROWTH, Analysis of High Speed Rail Alignments and Smart Growth*, prepared for the California High Speed Rail Authority and the City of Palmdale, California, dated July 26, 2004 by Dr. Robert H. Freilich, The Antelope Valley alignment is superior to the I-5/Grapevine alignment with respect to all of the local, regional, state and federal land use environmental and smart growth policies. It protects agricultural resources from accelerated spillover growth, maximizes ridership, and supports regional and local land use patterns. The study by Dr. Freilich is submitted apart from these comments by the City of Palmdale, and is incorporated by reference

3. PROPOSED MITIGATION MAY BE INFEASIBLE.

Section 3.8.5 Mitigation Strategies suggests that specific farmland mitigation strategies should consider measures such as 'protection or preservation off-site lands to mitigate conversion of farmlands or acquiring easements, or payment of an in-lieu fee'. In this instance, the ability to mitigate the I-5 HST alignment's impact on farmlands through creation of agricultural easements or other identified measures may be limited by appellate court findings in *Friends of the Kangaroo Rat v. California Department of Corrections* [111 Cal.App.4th 1400 (2003)]. In this case, the court held that the creation of an agricultural easement does not fall within the definition of "mitigation" set forth in CEQA Guidelines 15370. Prime farmland is considered a finite resource, the loss of which cannot be mitigated by payments to continue farming on other lands already being farmed. Further, the court noted that acquiring undeveloped land for conversion to agricultural use would likely have natural habitat impacts that are not environmentally beneficial, and converting developed land to farmland was infeasible for obvious reasons.

Short of avoidance of important farmlands altogether, the impacts of the I-5 HST alignment option within the Bakersfield to Sylmar segment are likely to be found to be significant and unavoidable, should this alternative be carried forward to project-level environmental review.

SECTION 3.9 - AESTHETICS AND VISUAL RESOURCES

1. VISUAL IMPACTS OF TUNNEL CONSTRUCTION ARE NOT ADDRESSED

The DEIR/S fails to mention any of the potential HST visual impacts associated with the tunnel portals, construction stockpiles, and/or the roadways necessary for access.

2. VISUAL ANALYSIS AND CONCLUSIONS LACK SUPPORT

The analysis of the relative aesthetic and visual impacts of the HST alignment alternatives in the Bakersfield to Los Angeles segment (page 3.9-17) is confusing and the conclusions lack support. The I-5/Wheeler Ridge alignment is identified as having the lowest aesthetics/visual quality impacts of the alignments in the Bakersfield to Sylmar segment, yet the Wheeler Ridge and Union Avenue alignment options are both identified as having high-contrast impacts related to aerial structures. This section also indicates “the landform in the mountainous areas on the Antelope Valley corridor would be largely unaltered”, yet the next sentence indicates “visual contrast related to cut and fill in these areas would therefore be greater than along the I-5 corridor”—an apparent contradiction.

3. I-5/GRAPEVINE VISUAL IMPACTS TO RECREATION AREAS AND NATIONAL FOREST VIEWSHEDS ARE UNDERSTATED

The section also fails to mention the potential HST visual impacts to the recreation areas along the I-5 corridor and the potential impacts to the Angeles National Forest viewshed. The resulting visual impacts along the I-5 route would be visible to many more people than the SR 58 Corridor Route.

Given the high visual amenity and sensitivity of the I-5 corridor, particularly between the Grapevine to Santa Clarita section that includes scenic national forest lands within the viewshed, it is difficult to justify the conclusion that either of the I-5 alignment options would be superior to an Antelope Valley alignment. As noted above, the visual impact of a HST construction and operation along an I-5 alignment would likely be visible to more people along non-tunnel segments than with the Antelope Valley alignment.

4. NO ANALYSIS OF HST VISUAL IMPACTS IN THE SYLMAR TO LOS ANGELES SEGMENT

In the Bakersfield to Los Angeles section (page 3.9-17), there is no analysis of impacts in the Sylmar to Los Angeles segment.

5. VISUAL SIMULATION OF HST ALONG I-5/GRAPEVINE IS NEEDED

Although a photo simulation of a potential extensive cut slope in Soledad Canyon is depicted in Figure 3.9-18B, no corresponding photo simulation of visual impact of the HST is provided for the I-5 alignment within the Bakersfield to Sylmar segment. To portray visual impact in a balanced light, such a simulation should be provided in this section depicting a 'worst-case' I-5 scenario.

6. BAKERSFIELD TO LOS ANGELES AESTHETICS AND VISUAL QUALITY TECHNICAL EVALUATION IS MISSING SIMULATION INFORMATION

This report is missing the photo visual simulations for all locations on the route. Of particular interest, however, are the maps of the visual simulation areas showing rather precise route locations. See for example Figure 4.3-1; 4.3-3; 4.3-4; 4.3-5; 4.3-6 and 4.3-8. If this level of route detail and alignment specificity was available for the visual simulations, why was not it used for the other environmental disciplines in the DEIR/S? The document also fails to include photo simulations discussed in the technical report. Figure 4.3-2 on page 39 of the document is blank. The caption states that the figure is of existing conditions and photo-simulations. There are no such figures in the document.

The assessment that both routes have similar types and levels of visual impacts (page 49) is misleading. The impacts associated with the I-5/Tehachapi Corridor would be to State Parks and Recreation areas and lands within the Angeles National Forest that have strict guidelines for visual degradation. This route would also be visible by a higher number of people on a daily basis when compared to the SR58 route.

SECTION 3.10 - PUBLIC UTILITIES

1. ANALYSIS OF HST UTILITY CONFLICTS LACKS DETAIL

The Analysis of impacts to public utilities is very general and lacks sufficient data to support utility conflict information for HST alternatives. The DEIR/S relies upon the broad programmatic analysis, addressing only representative major utilities and does not address local details. Table 3.10-2, Summary of Potential Public Utilities Conflicts for Alternatives, quantifies a wide range in the number of major utilities affected by HST alternatives in the Bakersfield to Los Angeles segment, but provides no breakdown by specific alignment alternative.

However, the Bakersfield to Los Angeles segment comparison states that The SR-58/Soledad Canyon corridor option would have the fewest overall utility conflicts while the I-5 Tehachapi corridor option would have the most conflicts (page 3.10-9).

2. SPECIFIC INFORMATION ON UTILITY AVOIDANCE OPTIONS IS NEEDED

The primary method for mitigation to Public Utility impacts is avoidance, by either routing the public utility or the transportation line around over, or under the facility. This approach would be limited by constrained corridors such as the I-5 Tehachapi corridor option. The DEIR/S does not provide a comparison of any of the routing alternatives. This item added into the analysis would allow for better comparisons between all routing options.

SECTION 3.11 - HAZARDOUS MATERIALS AND WASTES

1. HAZARDS OTHER THAN HAZARDOUS MATERIALS AND WASTES ARE NOT DISCUSSED

This section is focused on the topics of hazardous materials and wastes, and does not discuss other hazards listed in CEQA Guidelines Appendix G (VII. Hazards and Hazardous Materials) that may result in significant impacts.

For example, issues associated with 'potential impairment or interference with an adopted emergency response plan or emergency evacuation plan' (CEQA Guidelines Appendix G-VII.g) are not addressed here. Although various 'safety' considerations associated with the system alternatives are addressed in DEIR/S Section 3.2 Travel Conditions, there is no apparent discussion anywhere in the DEIR/S text of emergency response or emergency evacuation impacts associated with the tunneling requirements of various HST alignments. Neither Section 3.2 Travel Conditions, nor Section 3.13 Geology and Soils deal with this aspect of the HST system and alignment alternatives. It would appear that the closest the Environmental Document comes to dealing with this potentially significant impact of emergency response and evacuation of the HST in a tunnel mode is on page 3.2-22 (Travel Conditions), where it is noted that no HST injuries or fatalities have ever occurred in Japan as a result of a seismic event.

2. ANALYSIS LACKS SUFFICIENT DETAIL TO DISTINGUISH HST ALIGNMENT ALTERNATIVES

The information in Section 3.11 is so broad and preliminary as to make hazardous materials and wastes considerations insignificant in the selection of a system alternative or selection of HST alignments for further consideration.

Figure 3.11-1 Hazardous Material and Waste Locations in the Study Area. Table 3.11.3-1 Potential Hazardous Material and Waste Sites Comparison—Modal and High Speed Train Alternatives. Due to the statewide scale of the figure, it is difficult to correlate the mapped sites with the numbers of identified sites in the table, for the Bakersfield to Los Angeles region (and Bakersfield to Sylmar segment). For ease of reference and consistency with other sections of the DEIR/S, a Bakersfield to Los Angeles region base map is needed.

Appendix 3.11-A. Results of Hazardous Materials Database Searches. An SPL Listing site is identified for the I-5 Grapevine Corridor (via Union Avenue Corridor) that does not appear on Figure 3.11-1 Hazardous Materials and Waste Locations in the Study Area.

There is relatively little to distinguish between the alignment alternatives in the Bakersfield to Los Angeles segment in terms of the number of sites identified. As a result, the identification of alignments in this segment with 'greatest potential for impact' and 'least potential for impact' is not particularly meaningful.

3. USE OF HAZARDOUS MATERIALS IN HST CONSTRUCTION AND OPERATIONS SHOULD BE DISCUSSED

Hazardous Materials/Wastes Technical Evaluation, Bakersfield to Los Angeles Region; P&D Consultants (2004). In Section 2.3 Hazardous Materials Used in Operation, Maintenance and Construction of the Alternatives, it is indicated that a 'qualitative review' of these impacts will be included in the Program DEIR/S. However, Section 3.11 appears to discuss only the impacts of existing or potential hazardous materials and wastes sites upon construction, operations and maintenance activities (page 3.11-3). Hazardous materials used are not identified or characterized in the DEIR/S.

It is apparent in review of the tabulated breakdown of sites in the NPL/Superfund, SPL Listings, and SWLF Listings that a single recorded site can fall into one or more listing categories. This should be clarified in DEIR/S Section 3.11 and Appendix 3.11-A with regard to the quantification of sites.

The information in Table 4.0-1 Detailed Analysis/Comparison Table and the summary in Section 4.3 for the HST Alternatives is helpful in understanding the nature, type and location of hazardous materials and waste sites within this segment. This information should have been included in Section 3.11 of the DEIR/S to facilitate the review.

SECTION 3.12 - CULTURAL AND PALEONTOLOGICAL RESOURCES

The programmatic level of analysis conducted for cultural and paleontological resources makes it difficult to make selections without very specific criteria of comparison. The comments below address some of these issues and attempt to provide a more accurate depiction of the resources for comparative purposes.

1. LACK OF CULTURAL AND HISTORIC SURVEYS SKEWS IMPACT RESULTS

This section presents a potentially skewed assessment of cultural resources impacts by failing to clearly factor in the percentage of each HST alignment alternative that has not been surveyed. In so doing, the estimation of the number of cultural sites potentially impacted can be very misleading.

Also, use of a methodology for assessment of historic impacts based primarily upon the percentage of each alternative corridor that passes through areas that originally developed in specific predefined historic time periods is highly unorthodox, and provides a poor substitute for preliminary surveys for historic structures and/or quantification of the number of sites listed on the National Register of Historic Places (NRHP) that may be impacted.

2. I-5/GRAPEVINE HST IMPACTS TO FORT TEJON AREA A POTENTIAL CONCERN

Traditional Cultural Resources Properties concerns seem to be focused on the I-5 Route between Grapevine and Frazier Park. There are known traditional properties along the route. Cultural resources along the I-5 route and impacts to Fort Tejon and other sites could be of concern. Impacts to Fort Tejon, even indirect would be severe as it is a NRHP site as well as Park and State Historic Landmark. (pages 3.12-3 and -4)

3. METHODS OF EVALUATION ARE UNORTHODOX

The methodology for determining low, medium or high impacts is based on "known" information (pages 3.12-4). Thus if an area has been subjected to extensive surveys, there is a greater potential to have a high impact. This might not be the case in the real world. Portions of the Tejon Ranch have not been surveyed. A more appropriate way to evaluate would be to have a number indicating the percent of the route that has been surveyed. Using this number with the number of sites in an area would be a better method for comparison.

The methods of analysis for historic structures is unorthodox. It basically says that any developed areas might have impacts based on nothing other than being built more than 50 years ago. It states that "Specific structures from the historic period were not identified for this program level analysis. Instead, the percentage based on linear miles of each alternative corridor that passed through areas that originally developed in specific predefined historic time periods (before 1900, 1900 to 1929, and 1930 to 1958) was determined from historical maps, aerial photographs, and local planning documents of the history of the region." (page 3.12-5).

Again using a methodology that documents what percentage of a route has been surveyed, what types of sites have been identified and what number of existing NRHP sites are present on a route would be a more comparable approach.

4. AREAS OF POTENTIAL EFFECT (APE) NEED CLARIFICATION

Affected Environment A. Study Area Defined: Area of Potential Effect: There is no reference as to where the APEs are defined for the routes. Does the I-5 corridor have the same width the entire length? How about SR58/Soledad Canyon? The document states (page 3.12-6) that the APE for cultural resources for the proposed HST Alternative is as follows:

- 500 ft (152 m) on each side of the centerline of proposed new rail routes where additional right-of-way could be needed.
- 100 ft (30 m) on each side of the centerline for routes along existing highways and railroads where very little additional right-of-way would be needed.
- 100 ft (30 m) around station locations.

This does not indicate if similar areas were examined for each alternative. It may be possible that one route was primarily analyzed at 100 ft and another was done at 500 feet.

5. THERE IS A HIGH POTENTIAL FOR BURIED CULTURAL RESOURCES ALONG I-5/GRAPEVINE ROUTE

Based on the text (page 3.12-22), there is a high potential for unidentified buried resources along the I-5 route. These resources could have significance to Native American Groups and might be difficult to mitigate. There are also NRHP sites along this portion of the route that could be affected by construction activities.

The SR58/Soledad route has a low potential for archaeological sites and there is little mention of Native American concerns. The corridor through the Antelope Valley has the potential to impact 68 recorded archaeological sites in an undefined corridor width (Note - the Technical Report indicates that there are only 20 sites). The report states that most of the sites in the Antelope Valley corridor are historic trash scatters along the railroad (these would be unlikely to be NRHP eligible).

6. THE HIGH-SPEED TRAIN ALIGNMENT COMPARISON NEEDS CLARIFICATION

High-Speed Train Alignment Comparison (pages 3.12-21, -22, -23) This section includes conflicting information and it is difficult to tell what is being said. The first paragraph discussion is on archaeological sites (presumably prehistoric); however, it then says that there are historic trash scatters along the rail corridors in the Antelope Valley (page 3.12.-22). The historic documentation is the opposite. The I-5 corridor has a number of historic structures - some which are on the NRHP and some Historic Landmark Sites.

Generally, it is difficult to determine what has been studied, what the widths of study are, whether they are the same width between the two lines and if different, where? This coupled with no way of determining if the lack of sites on a portion of the route is due to little or no survey coverage or the true lack of archaeological materials.

7. THE CULTURAL RESOURCES TECHNICAL REPORT NEEDS CLARIFICATION

The following comments apply to the Bakersfield to Los Angeles Cultural Resources Technical Report, listed in Section 12 of the DEIR/S.

Figure 2.2-1 (page 15) Approximate Location of Native American Groups. In Project Region at the Time of European Contact. Based on following territories, this map should have included the tribes west of the Tatavium (possibly Emigdiano Chumash?) and north of the Kitanemuk.

Page 32 indicates that response from Native American groups has either not been received, or have not been sent out. There are some known issues along the I-5 Tehachapi Corridor in the vicinity of the Grapevine. This would be associated with the Sebastian (Tejon) Indian Reservation CHL and other known proto-historic to historic village sites at the Grapevine split in I-5.

Rankings considered the number of known sites per mile, accounting for the percentage of each segment that had been subjected to archaeological survey in the past. (page 35)

Specific structures from the historic period were not identified at this Tier 1 programmatic level of analysis. Instead, the percentage, based on miles, of each alternative route that passed through areas that originally developed in specific, pre-defined historical time periods (before 1900, 1900 to 1929, and 1930 to 1958) was determined from historical maps and knowledge of the history of the region. The percentages were used as indicators of the potential for a particular alternative to impact or affect potentially eligible structures from the historical time periods. Percentages of route lengths that developed in various periods were then translated into qualitative rankings of Low, Medium, and High, with greater weight given for structures or districts known to be listed on or eligible for the National Register of Historic Places, and for segments that were developed in earlier periods. (page 35). Nowhere does this document define what is low, medium or high. The reader is unable to tell if the lows are equal to one another.

The High Speed Train Alternative lists the Antelope Valley as having 120 archaeological sites. The text on page 40 indicates that there are 20 sites. Based on the addition in the DEIR/S, the 20 sites is the correct number.

Section 4.3.1 Alignments. The percentage of surveyed area of the Antelope Valley Corridor (50% page 40) may explain the higher number of sites and the higher number of sites per mile (page 40). If percentage of the Corridors surveyed were included in the calculations used to document for all segments, it would be easier to assess the information presented in the Technical Evaluation. Another useful tool would be the number of NRHP listed and eligible sites. Several sites in the SR 58 and Antelope Valley segments are not eligible for NRHP and thus their significance to the count is diminished.

8. THE PALEONTOLOGICAL RESOURCES TECHNICAL EVALUATION FAILS TO DISCUSS POTENTIAL HST TUNNELING IMPACTS ON THESE RESOURCES

The following comment applies to the Bakersfield to Los Angeles Cultural Resources Technical Report, listed in Section 12 of the DEIR/S.

None of the report sections discuss tunneling impacts on paleontological resources, or provide a comparative evaluation of alignments in this regard. This is one of several issue areas in the DEIR/S where the subsurface impacts could be more severe than surface impacts. Based on the information provided, it is impossible to make a comparative finding

of impact, other than the fact that the I-5 Tehachapi Corridor has more miles of tunneling than the SR 58/Antelope Valley/Soledad Canyon Corridor.

SECTION 3.13 - GEOLOGY AND SOILS

This section misses an opportunity to clearly differentiate the environmental acceptability between route alternatives.

1. THE RANKING SYSTEM FOR COMPARING IMPACTS IS BASED ON PERCENTAGE OF LENGTH RATHER THAN ON ABSOLUTE VOLUMES.

Table 3.13-1 Ranking System for Comparing Impacts Related to Geology/Soils/Seismicity, page 3.13-2 is misleading and possibly flawed. Impact ratings for "Seismic Hazards," "Slope Instability," "Difficult Excavation" and "Oil and Gas Fields" are based on the percentage of the length of the segment that is affected rather than the absolute magnitude of the impact. Thus a longer segment with high volumes of impacts might receive a lower impact rating than a shorter segment with a higher percentage of impact but lower overall volumes. The outcome of this rating system is unclear, but it would be more illustrative of impact levels to utilize actual lengths, volumes or acreage.

2. THE ANALYSIS FAILS TO IDENTIFY CRITICAL DIFFERENCES BETWEEN ALTERNATE ROUTES LINKING BAKERSFIELD TO LA.

The most critical difference between the I-5 corridor and the AV corridor is their constructability through difficult terrain. Yet this section provides scant evidence of the major differences in their geologic attributes. While Table 3.13-2 Summary of Geology (sic) Potential Impact Rankings by Alternative and Segment provides some comparative rankings between the Modal Alternatives, it lumps together the attributes of the route alternatives between Bakersfield to LA. Similarly, the text on page 3-13-11 indicates no significant differences between the I-5, SR-58, SR-138 and Wheeler Ridge Alignments. However, a mere glance at Figure 3.13-2 shows quite graphically that the I-5 route hugs fault lines along most of its length. Furthermore, the alignment options comparison contained in Chapter 6 indicates that construction of the I-5 corridor would require 23 miles of tunnels with some more than 5 miles long and construction costs would be \$76 million per mile. Conversely, the AV route through "less abrupt" terrain would require only 13 miles of tunnels with none over 3.4 miles long and construction costs would be only \$54 million per mile. These radical differences in constructability are directly attributable to the respective geologic environments and this section must clearly define the respective impacts. This information is contradicted by the Transmetrics and Geodata report entitled "A Comparative Analysis of Tunnel Construction Times, Costs, and Risks Associated with the Choice of High Speed Rail Tunneling Alignment between Los Angeles and Bakersfield (2003). The conclusions of the report indicate the "although the amount of tunneling work involved in the I-5 and the AV alignment are almost the same, be it the 2.5% grade or the 3.5% grade option, the ground

conditions along the AV are relatively more stable and hence involve less construction risks, financial risks, and contractual risks." (page 83)

3. THE ANALYSIS FAILS TO TAKE INTO ACCOUNT THE DIFFICULT TUNNELING CONDITIONS IN THE I-5/GRAPEVINE CORRIDOR.

A study completed in January 2003 by GEODATA and Transmetrics, specialists in tunnel construction noted the extensive faulting, steep terrain, shallow ground water tables and oil and gas fields along the I-5 route. The study concluded that in comparison to that required for the AV route, the tunneling on the I-5 route would take twice as long, be subject to substantially more face failures due to ground shifting or squeezing, be subject to more groundwater and or toxic gas infiltration and, of course, be more costly. These results are consistent with earlier findings showing the risk of tunneling cost overrun to be dramatically higher on the I-5 Alignment (HLB Decision Economics; see references in Introduction). The results of these studies,(copies provided) must be integrated into the geologic analysis contained in this section.

4. THE SECTION INCLUDES NO THRESHOLDS OF SIGNIFICANCE

The analysis in this section provides only comparative levels of impact between the alternatives and provides neither thresholds of significance nor an assessment of the level of impacts.